

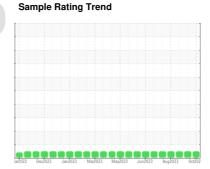
OIL ANALYSIS REPORT



MONTGOMERY **MACK 420043**

Component
Diesel Engine

PETRO CANADA DURON SHP 15W40 (--- LTR)





DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Metal levels are typical for a new component breaking in.

Contamination

There is no indication of any contamination in the

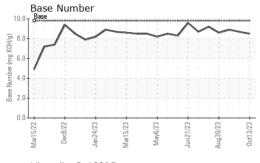
Fluid Condition

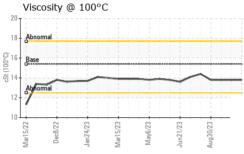
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0092417	GFL0089894	GFL0089883
Sample Date		Client Info		13 Oct 2023	02 Oct 2023	14 Sep 2023
Machine Age	hrs	Client Info		739	643	518
Oil Age	hrs	Client Info		739	643	518
Oil Changed		Client Info		Not Changd	Not Changd	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>120	3	2	2
Chromium	ppm	ASTM D5185m	>20	<1	0	<1
Nickel	ppm	ASTM D5185m	>5	<1	0	0
Titanium	ppm	ASTM D5185m	>2	<1	0	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	2	<1	2
Lead	ppm	ASTM D5185m	>40	<1	0	<1
Copper	ppm	ASTM D5185m	>330	<1	0	<1
Tin	ppm	ASTM D5185m	>15	<1	<1	<1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	nnm	ASTM D5185m		<1	0	0
Caumum	ppm	AS TWI DO TOSHI		<1	0	O
ADDITIVES	ррпі	method	limit/base	current	history1	history2
	ррт		limit/base			
ADDITIVES		method		current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	0	current 2	history1	history2
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	0	current 2 10	history1 5 0	history2 0 0
ADDITIVES Boron Barium Molybdenum	ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	current 2 10 61	history1 5 0 61	history2 0 0 64
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	current 2 10 61	history1 5 0 61 0	history2 0 0 0 64 <1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	current 2 10 61 0 893	history1 5 0 61 0 937	history2 0 0 64 <1 977
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070	current 2 10 61 0 893 1009 994 1139	history1 5 0 61 0 937 1027	history2 0 0 64 <1 977 1108 1033 1262
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150	current 2 10 61 0 893 1009 994	history1 5 0 61 0 937 1027 971	history2 0 0 64 <1 977 1108 1033
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	current 2 10 61 0 893 1009 994 1139 2942 current	history1 5 0 61 0 937 1027 971 1172 3002 history1	history2 0 0 64 <1 977 1108 1033 1262 3454 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	current 2 10 61 0 893 1009 994 1139 2942	history1 5 0 61 0 937 1027 971 1172 3002	history2 0 0 64 <1 977 1108 1033 1262 3454 history2 6
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base	current 2 10 61 0 893 1009 994 1139 2942 current 3 0	history1 5 0 61 0 937 1027 971 1172 3002 history1 4 3	history2 0 0 64 <1 977 1108 1033 1262 3454 history2 6 2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base	current 2 10 61 0 893 1009 994 1139 2942 current 3	history1 5 0 61 0 937 1027 971 1172 3002 history1 4	history2 0 0 64 <1 977 1108 1033 1262 3454 history2 6
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base	current 2 10 61 0 893 1009 994 1139 2942 current 3 0	history1 5 0 61 0 937 1027 971 1172 3002 history1 4 3	history2 0 0 64 <1 977 1108 1033 1262 3454 history2 6 2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	current 2 10 61 0 893 1009 994 1139 2942 current 3 0 1	history1 5 0 61 0 937 1027 971 1172 3002 history1 4 3 1	history2 0 0 64 <1 977 1108 1033 1262 3454 history2 6 2 <1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20	current 2 10 61 0 893 1009 994 1139 2942 current 3 0 1	history1 5 0 61 0 937 1027 971 1172 3002 history1 4 3 1 history1 0.1 5.2	history2 0 0 64 <1 977 1108 1033 1262 3454 history2 6 2 <1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20	current 2 10 61 0 893 1009 994 1139 2942 current 3 0 1 current	history1 5 0 61 0 937 1027 971 1172 3002 history1 4 3 1 history1 0.1	history2 0 0 64 <1 977 1108 1033 1262 3454 history2 6 2 <1 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	current 2 10 61 0 893 1009 994 1139 2942 current 3 0 1 current 0.2 5.8	history1 5 0 61 0 937 1027 971 1172 3002 history1 4 3 1 history1 0.1 5.2	history2 0 0 64 <1 977 1108 1033 1262 3454 history2 6 2 <1 history2 0 7.7
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m method *ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >4 >20 >30	current 2 10 61 0 893 1009 994 1139 2942 current 3 0 1 current 0.2 5.8 18.0	history1 5 0 61 0 937 1027 971 1172 3002 history1 4 3 1 history1 0.1 5.2 17.6	history2 0 0 64 <1 977 1108 1033 1262 3454 history2 6 2 <1 history2 0 7.7 21.7



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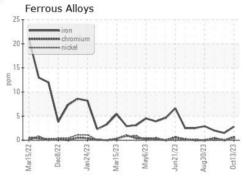


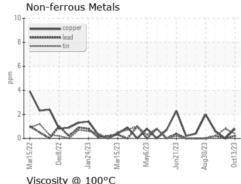


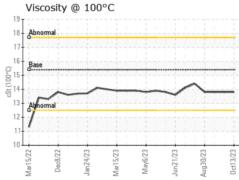
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG

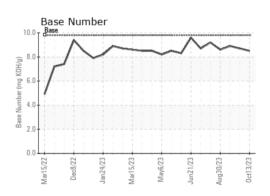
FLUID PROPI	ERTIES	method				history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.8	13.8	13.8

GRAPHS













Certificate L2367

Laboratory Sample No.

Lab Number Unique Number : 10699016

: GFL0092417 : 05981721

Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 17 Oct 2023

Diagnosed : 18 Oct 2023 Diagnostician : Wes Davis

GFL Environmental - 955 - Montgomery

1121 Wilbanks St Montgomery, AL US 36108

Contact: LISA REEVES

To discuss this sample report, contact Customer Service at 1-800-237-1369.

* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

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F: